

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of automatically mapping network addresses of a first protocol for a plurality of network elements in a first network to network addresses of a second protocol, comprising the steps of:

defining a table in each network element of the plurality of network elements;

assigning ~~a protocol identifier within an address~~ corresponding to the first protocol for each network element of the plurality of network elements;

assigning an address corresponding to the second protocol for each network element of the plurality of network elements;

associating said ~~protocol identifier with the addresses~~ corresponding to the first and second protocols within said table for each network element of the plurality of network elements, ~~when the second protocol is being~~ a different protocol than the first protocol; and

~~associating an update timer with each protocol identifier for each network element in the first network~~ wherein each of the network elements utilize the first protocol addresses to transmit

data destined for other network elements via the first network.

2. (Currently Amended) The method of claim 1, further comprising the steps of:

associating an update timer with the first protocol address for each network element in the first network,

propagating the first protocol identifier-address from each network element in the first network at periodic intervals;

resetting the update timer associated with each network element in the first network upon propagation of the first protocol identifier-address from that network element; and

removing a network element from the table if the update timer for that network element reaches a pre-determined count value.

3. (Original) The method of claim 2 further comprising the step of defining a port number for 5 each network element in the first network.

4. (Original) The method of claim 3 wherein the first network is coupled to a second network, the method further comprising the step of associating a port number with the network to which the network element is coupled.

5. (Original) The method of claim 2 wherein the first network is configured in a ring topology.

6. (Original) The method of claim 2 wherein the first network is a point-to-point network.

7. (Original) The method of claim 5 wherein the first network is a SONET ring network and the first network protocol comprises the Internet protocol operating over a SONET Data Communications Channel protocol.

8. (Previously Presented) The method of claim 2, further comprising the step of maintaining a status of each network element in the table.

9. (Original) The method of claim 2 wherein the status of each network element comprises one of new node, updated node, and deleted node.

10. (Currently Amended) A method of associating a network address of a network element within a SONET ring network to a second network utilizing Internet Protocol addressing, the method

comprising the steps of:

assigning a Transport Identifier address to each of a plurality of network elements within the SONET ring network;

advertising an Internet Protocol address of a gateway node
coupling the SONET ring network to the second network;

transmitting a message to the gateway node, the message
including a Transport Identifier address of a network element to
be accessed;

maintaining a table in the gateway node that specifies
respective Transport Identifier addresses with associated Internet
Protocol addresses for each network element within the SONET ring
network;

transmitting the message to the network element whose
Internet Protocol address corresponds to the transmitted Transport
Identifier address.

11. (Original) The method of claim 10 further comprising
the steps of:

associating an update timer with each network element in
the SONET ring network;

resetting the update timer associated with each network
element upon propagation of a Transport Identifier address from
that network element; and

removing a network element from the table if the update timer for that network element reaches a pre-determined count value.

12. (Original) The method of claim 11 wherein the SONET ring network implements an Internet protocol operating over a SONET Data Communications Channel protocol.

13. (Previously Presented) The method of claim 11, further comprising the step of maintaining a status of each network element in the table.

14. (Original) The method of claim 13 wherein the status of each network element comprises one of new node, updated node, and deleted node.

15. (Original) The method of claim 14 wherein the table comprises a plurality of entries including node Transport Identifier address, Internet Protocol address, and status information for each network element in the SONET ring network.

16. (Previously Presented) The method of claim 1, wherein said table is empty upon initiation.

17. (Previously Presented) The method of claim 10, wherein said table is empty upon initiation.